

FILED  
for Roanoke  
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IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF VIRGINIA  
ROANOKE DIVISION

JULIA C. DUDLEY, CLERK  
BY:   
DEPUTY CLERK

MCAIRLAIDS, INC., )  
v. )  
Plaintiff, ) Civil Action No. 7:13cv193  
KIMBERLY-CLARK CORPORATION, et al., ) By: Hon. Michael F. Urbanski  
Defendants. ) United States District Judge

MEMORANDUM OPINION

Plaintiff McAirlaids, Inc. brings this action against defendants Kimberly-Clark Corporation, Kimberly-Clark Worldwide, Inc., and Kimberly-Clark Global Sales, LLC (collectively, "Kimberly-Clark"), alleging infringement of U.S. Patent No. 6,675,702. This matter is currently before the court for claim construction pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996). The issues have been extensively briefed<sup>1</sup> and argued and are ripe for adjudication.

I.

McAirlaids is the owner of U.S. Patent No. 6,675,702 (the "'702 Patent"), entitled "Method and Device for Producing a Strip of Cellulose Fiber Material for Use in Hygiene Articles," which was issued by the United States Patent and Trademark Office on January 13, 2004. The '702 Patent claims a method and device for producing a strip of absorbent, tear-resistant, rollable, cellulose fiber material suitable for use in the hygiene sector—for example, as a bed pad. The patent also claims an absorbent fiber mat manufactured according to this method.

The '702 Patent boasts significant improvement over prior methods for creating a fiber web from cellulose fibers. One such prior method involves use of mechanical and chemical processing steps under intensive heating while excluding oxygen. The process described in the '702 Patent uses

<sup>1</sup> See Dkt. # 84, 85, 91, 92, 116, 117, 130.

no binding agents and can be carried out at room temperatures under normal atmospheric pressure, and with the oxygen content of ambient air. Another prior manufacturing method utilizes smooth calender rollers to create an absorbent fiber material with low tear strength, requiring the addition of synthetic additives. A hallmark of the method described in the '702 Patent is use of a pair of patterned calender rollers, which create an embossing pattern and result in a stronger fiber material.

Of particular relevance to the instant analysis is the claimed improvement over the process described in U.S. Patent No. 3,692,622 ("the Dunning process"). The Dunning process is similar to the process described in the '702 Patent in that it takes an irregular fiber layer and, under relatively low pressure, produces a loose non-woven fabric with low density and tear strength. The loose non-woven is then entered into a pair of patterned calender rolls, which creates a soft, absorbent fiber web. The fiber web created using the Dunning process has a tear strength of about 0.09 kN/m and thus tears easily, such as with facial tissues. Employing a similar technique, the '702 Patent improves on this prior art by using a pair of patterned calender rolls to compress the irregularly arranged fibers together at a higher pressure, which creates a fiber web with a tear strength of at least 0.12 kN/m.

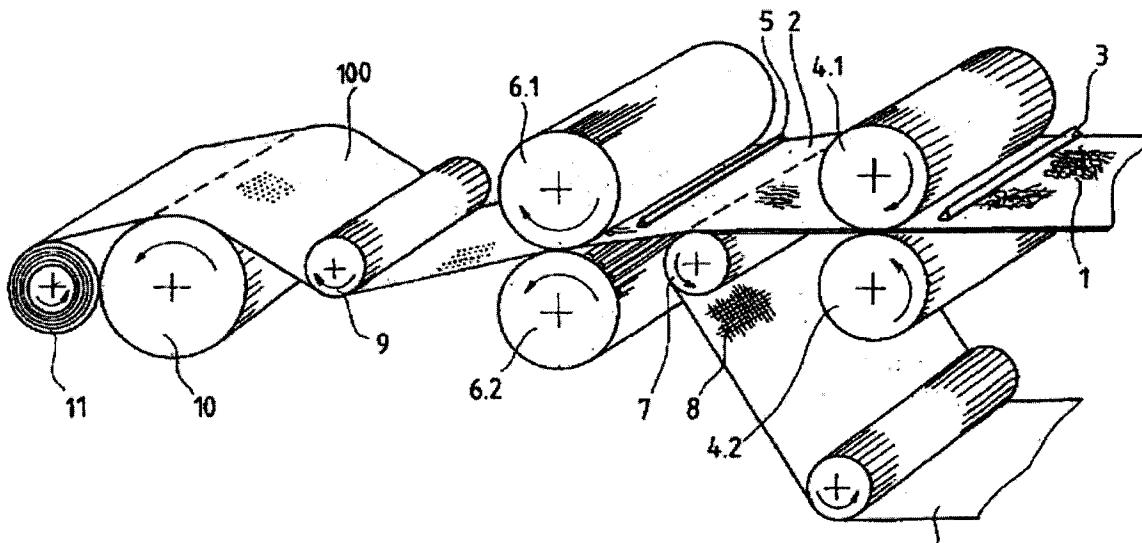
Claim 1 of the '702 Patent is representative:

A method for producing an absorbent fiber web which is tear resistant, and rollable, from cellulose fibers, cellulose pulp or of wood pulp cardboard without the use of additional binding agents, where said fiber web is suitable for use in the hygiene sector comprising the following processing steps:

- (a) providing an irregular cellulose fiber layer and pre-condensing it under relatively low pressure to produce a loose non-woven with low density and tear strength; and
- (b) providing a pair of calender rolls having a pattern of point or line-shaped studs, defining a gap therebetween, and inserting the loose non-woven into the gap of the calender rolls that is used to create a pattern of point or line-shaped pressure zones under relatively high pressure, where the irregularly arranged fibers are pressed onto each other, wherein
  - 1) the loose non-woven has a moisture content of up to 5 percent by weight when it is inserted,

- 2) The irregularly arranged fibers are pressed onto each other under a pressure in a range between 250 and 600 Mpa such that non-separating fusion of the fibers occurs and a fiber web with an embossing pattern is created, and
- 3) The tear strength of the fiber web is at least 0.12 kN/m.

‘702 Patent, col. 9, ll. 48- 67; col. 10, ll. 1-5. The following illustration depicts an arrangement of rollers used to carry out this process:



‘702 Patent, Fig. 1. The process, which moves from right to left, begins with a layer of irregular cellulose fibers 1, which are moisturized 3 and then precompressed using a pair of calender rollers 4.1 and 4.2. The loose non-woven 2 is again moisturized 5 before entering a second set of calender rollers 6.1 and 6.2, which are patterned.

Between the calender rolls 6.1 and 6.2, the initially loose non-woven is subjected to an array of point-shaped pressure zones, where the irregularly arranged fibers are pressed onto each other under high pressure, such that a close fusion of the fiber bodies occurs and a fiber web 100 with an embossed pattern is created that will not separate after the pressure is released.

‘702 Patent, col. 5, ll. 29-35. In this illustrated embodiment, the material is treated with a broad drying roller 9, and wrapped onto a take-up roller 11 with the use of a driver roller 10.

The '702 Patent contains 24 claims.<sup>2</sup> In this lawsuit, McAirlaids alleges Kimberly-Clark has infringed on claims 1-4, 7-10, 12, 13, and 18-20. Specifically, McAirlaids contends that Kimberly-Clark's Good Nites® bed mats have been manufactured using an infringing process. For its part, Kimberly-Clark argues its manufacturing process does not infringe upon the '702 Patent because the equipment used to manufacture Good Nites® utilizes one patterned and one smooth calender roller, rather than the pair of patterned calender rollers characteristic of the '702 Patent.

## II.

The first step in a patent infringement case is to construe the meaning and scope of the patent claims at issue. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995), aff'd 517 U.S. 370 (1996). Claim construction is a matter of law exclusively for the court. Id. at 977-79; see also O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd., 521 F.3d 1351, 1360 (Fed. Cir. 2008) ("When the parties raise an actual dispute regarding the proper scope of these claims, the court, not the jury, must resolve that dispute." (citing Markman, 52 F.3d at 979)).

"To ascertain the meaning of claims, we consider three sources: The claims, the specification, and the prosecution history." Markman, 52 F.3d at 979 (quoting Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1561 (Fed. Cir. 1991)). "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

First, the court must look to the words of the claims themselves. The claim terms "are generally given their ordinary and customary meaning," that is, "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (citations omitted). "The inquiry into how a person of ordinary skill in the art

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<sup>2</sup> Four of these claims (claims 1, 12, 14 and 18) are independent claims; the remaining twenty are dependent claims. See 35 U.S.C. § 112(d).

understands a claim term provides an objective baseline from which to begin claim interpretation.”

Id. at 1313 (citing Innova/PureWater, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed. Cir. 2004)). “In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” Id. at 1314 (citing Brown v. 3M, 365 F.3d 1349, 1352 (Fed. Cir. 2001)).

The claims, however, do not stand alone and must be read “in view of the specification, of which they are a part.” Id. at 1315 (quoting Markman, 52 F.3d at 979). A person of ordinary skill in the art “is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” Id. at 1313. “[I]t is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.” Vitronics Corp., 90 F.3d at 1582 (citing Markman, 52 F.3d at 979). “[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” Phillips, 415 F.3d at 1316 (citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Thus, the specification is “always highly relevant” to the analysis. Vitronics Corp., 90 F.3d at 1582. “Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” Id.

Additionally, the court must consider the prosecution history, which contains “the complete record of all the proceedings before the Patent and Trademark Office [ (“PTO”)], including any express representations made by the applicant regarding the scope of the claims,” id., as well as “the prior art cited during the examination of the patent,” Phillips, 415 F.3d at 1317 (citing Autogiro Co.

of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 399 (1967)). “Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.” Phillips, 415 F.3d at 1317 (citing Lemelson v. Gen Mills, Inc., 968 F.2d 1202, 1206 (Fed. Cir. 1992)).

The claims, specification and prosecution history “constitute the public record of the patentee’s claim,” and, generally, “an analysis of th[is] intrinsic evidence alone will resolve any ambiguity in a disputed claim term.” Vitronics Corp., 90 F.3d at 1583. However, the court may, in its discretion, look to extrinsic evidence, “including expert and inventor testimony, dictionaries, and learned treatises,” Phillips, 415 F.3d at 1317 (quoting Markman, 52 F.3d at 980), in order “to aid the court in coming to a correct conclusion’ as to the ‘true meaning of the language employed’ in the patent.” Markman, 52 F.3d at 980 (quoting Seymour v. Osborne, 78 U.S. 516, 546 (1871)). Although it is “less significant than the intrinsic record in determining the legally operative meaning of claim language,” Phillips, 415 F.3d at 1317 (citations omitted), extrinsic evidence “may be helpful to explain scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history.” Markman, 52 F.3d at 980. “Extrinsic evidence is to be used for the court’s understanding of the patent, not for the purpose of varying or contradicting the terms of the claims.” Id. at 981. It “is not for the purpose of clarifying ambiguity in claim terminology.” Id. at 986.

### III.

Five claim terms of the ‘702 Patent require construction. As for one of those terms, “a pair of calender rolls having a pattern of point or line-shaped studs,” the parties have reached an agreement as to the proper construction and ask the court to construe this term to mean “two calender rolls where each roll has a pattern of point or line-shaped studs.” The court finds this agreed-upon construction to be reasonable and will adopt it.

The other four claim terms remain in dispute. Applying the principles of claim construction,

the court finds the following to be the proper construction of the terms (1) “fiber web;” (2) “rollable;” (3) “non-separating fusion of the fibers occurs;” and (4) “tear strength of the fiber web is at least 0.12 kN/m.”

#### A. Fiber web

The term “fiber web” is used extensively throughout the claims and specification of the ‘702 Patent. McAirlaids argues that no construction of this term is necessary,<sup>3</sup> or, in the alternative, that “fiber web” means “material which results from the claimed manufacturing process.” McAirlaids’ Opening Claim Construction Br., Dkt. # 85, at 8. For its part, Kimberly-Clark asserts that the term means “unsupported fibrous layer.” Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84, at 10. The court finds that “fiber web” does not require construction, as the term is easily understandable to one ordinarily skilled in the art.

The term “fiber web” is used in the claims language to describe the end result of the specific patented process. See, e.g., ‘702 Patent, col. 9, ll. 48, 51 (“A method for producing an absorbent fiber web . . . where said fiber web is suitable for use in the hygiene sector . . . .”); col. 10, l. 65 (“A device for producing an absorbent fiber web . . . .”); col. 12, ll. 15-16 (“such that a non-separating fusion of the fibers occurs creating a fiber web with an embossing pattern”). The term is also used in the specification to refer to the end product of the specific manufacturing process. See, e.g., ‘702 Patent, col. 2, ll. 6-8 (“It is a principal object of the present invention to specify a method for producing a fiber web made of cellulose fibers, where essentially no binding agents need to be used . . . .”); col. 3, ll. 6-9 (“Due to the distribution of the connecting points, this new fiber web has become so strong that a tear strength of at least 0.12 kN/m, preferably of up to 0.65 kN/m, is achieved.”); col. 5, ll. 58-60 (“The fiber web exiting the calenders is significantly more tear resistant than the web entering the calender rolls . . . .”).

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<sup>3</sup> At the May 29-30, 2014 Markman hearing, McAirlaids indicated that its primary position was that “fiber web” did not require construction.

In some parts of the specification, however, the term “fiber web” is used more generically. For example, in the “Background of the Invention” portion of the specification, the term is used to describe the prior art: “It is known to combine cellulose-containing material such as wood or plant fibers into a fiber web by employing a combination of mechanical and chemical processing steps under intensive heating while excluding oxygen.” ‘702 Patent, col. 1, ll. 12-15; see also *id.* at col. 1, ll. 49-50 (“The tear strength of this fiber web [manufactured according to the Dunning process] is about 0.09 kN/m.”); *id.* at col. 3, ll. 32-34 (“Preferably, this is a standardized defibered product, such as the one also used in manufacturing fiber webs according to known methods.”).

“Fiber web” must mean the same thing throughout the patent. See Paragon Solutions, LLC v. Timex Corp., 566 F.3d 1075, 1087 (Fed. Cir. 2009) (“We apply a ‘presumption that the same terms appearing in different portions of the claims should be given the same meaning unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims.’ ” (citations omitted)); Phillips, 415 F.3d at 1314 (“claim terms are normally used consistently throughout the patent”). Because the patent language, at times, uses the term “fiber web” in its discussion of prior methods, “fiber web” cannot be construed to mean material manufactured according to the specific process described in the ‘702 Patent. Consequently, neither McAirlaids nor Kimberly-Clark’s proposed construction of this term works.

Kimberly-Clark includes in its proposed construction the word “unsupported,” a characteristic unique to the ‘702 Patent’s manufacturing process. Kimberly-Clark explains on brief:

[T]he patent specification explains that this manufactured fibrous web or layer is “unsupported.” For example, as seen above in Illustration 1,<sup>4</sup> at the start of the manufacturing process(es), and before the fibers are embossed by the embossing rollers (6.1 and 6.2), a conveyor belt (8) supports the pulp fibers, *i.e.*, the fibers actually lay on the belt. (‘702 patent at Figure 1, 5:3-5, 5:25-28). This is because before embossing, the fibers are not a “fiber web.”<sup>5</sup> Rather, before

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<sup>4</sup> See Kimberly-Clark’s Opening Construction Br., Dkt. # 84, at 7 (annotated version of ‘702 Patent Figure 1).

<sup>5</sup> Both parties contend that a “fiber web” in the context of the ‘702 Patent is only created after the material passes

being processed through the first set of calender rolls, the patent describes the fibers as an “irregular cellulose layer” that is moved on the belt, and after the first set of calender rolls but before being embossed by the second pair of calender rolls, the patent describes the fibers as a “loose non-woven.” (See, e.g., ‘702 patent at 5:3-5 (“A layer of irregular fibers 1 . . . is conveyed to a first pair of calender rollers 4.1, 4.2 on a strainer conveyor belt 8”); 5:25-28 (“The non-woven 2 provided by the strainer belt 8 . . . prior to entering the gap between the two calender rolls 6.1 and 6.2.”)). In all cases, prior to embossing, the fibers must be supported by a conveyor belt or other structure. (*Id.*)

After embossing, however, the patent describes the fibers as a “fiber web,” and the patent repeatedly makes clear that this “fiber web” is not supported by a belt or any other structure. For example, all of the patent figures that show an overview of the process(es) show a conveyor belt supporting the pre-embossed irregular cellulose fiber layer and loose non-woven, but show the fiber web (formed after embossing) not being supported by the belt. (‘702 patent at Figures 1, 5, 6.)

Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84, at 10-11. Like McAirlaids, Kimberly-Clark construes “fiber web” in a way that is specific to the manufacturing process described in the

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through the second set of calender rolls and is embossed. See McAirlaids’ Resp. Br., Dkt. # 92, at 8; Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84, at 10-11. Certain language in the ‘702 Patent suggests to the contrary. For example, claims 11 and 19 use the term “fiber web” when referring to step (a) of claim 1. ‘702 Patent, col. 10, ll. 31-33 (“Method as set forth in claim 1, wherein the irregular cellulose fiber web of step (a) contains supplementary filler materials.”); col. 12, ll. 17-20 (“Method as set forth in claim 1, wherein the fiber web provided in step (a) is a mixture of fiber material and superabsorbent . . .”). Step (a) of claim 1 describes the pre-embossing portion of the manufacturing process. ‘702 Patent, col. 11, ll. 36-38. Elsewhere in the specification, the material is also referred to as a “web” prior to embossing:

A layer of irregular fibers 1 in a height of about 20 mm is conveyed to a first pair of calender rollers 4.1, 4.2 on a strainer conveyor belt 8. The upper roller 4.1 has a surface temperature of about 200°C., while the bottom roller is unheated. The *web* is moisturized by spraying from above using a moisturizing device 3 prior to entering the gap between the two rollers 4.1 and 4.2 . . .

‘702 Patent, col. 5, ll. 3-9 (emphasis added). The initial processing step described in this passage “is simply a pre-compression or compacting of the non-woven from the irregularly arranged fibers.” ‘702 Patent, col. 5, ll. 19-21. Afterwards, the material enters the second pair of calender rollers and is embossed. The ‘702 Patent refers to both the material entering the second pair of calender rolls and the material exiting the second pair of calender rolls as a “fiber web.” “The fiber web exiting the calenders is significantly more tear resistant than the web entering the calender rolls 6.1 and 6.2.” ‘702 Patent, col. 5, ll. 58-60. Thus, the patent language does not appear to limit the term “fiber web” to the finished, embossed material, as both parties argue. This is yet another reason why neither of the parties’ proposed constructions is proper.

‘702 Patent. Plainly, the term “fiber web” is not used exclusively in the ‘702 Patent to refer to its end product.

Moreover, the word “unsupported” appears nowhere in the patent language. On brief, Kimberly-Clark argues that in the prosecution history, McAirlaids described the manufactured material as an “unsupported fibrous layer:”

The patterned calender rolls produce a pattern of embossments of non-separating fusion of the cellulose fibers, imparting and [sic] a tear strength of at least 0.12 kN/m; sufficient strength to the unsupported fibrous layer that it may be taken up on a roll, and/or laminated with another material layer.

Kimberly-Clark’s Opening Construction Br., Dkt. # 84-4, at 5 (emphasis added); see also id. at Dkt. # 84-5, at 5; Dkt. # 84-6, at 10; Dkt. # 84-7, at 10. Kimberly-Clark insists none of the illustrated figures in the ‘702 Patent shows a conveyor belt supporting the embossed material after it passes through the second set of calender rolls, and, in the prosecution history, McAirlaids distinguished its process from the prior art, which required the material “to be supported during subsequent manufacturing steps.” Id. at Dkt. # 84, at 11; id. at Dkt. # 84-4, at 6.

However, references in the prosecution history to the material being “unsupported” speak to the strength of the product, not whether or not there happens to be a conveyor belt under the material after it passes through the second set of calender rolls. McAirlaids explained:

The fibrous web of Dunning has areas of hydrogen bonding produced by the application of moisture and pressure. These areas of hydrogen bonding areas [sic] do not produce good tear strength, severely limiting the uses of the web. The tear strength of the web of Dunning requires it to be supported during subsequent manufacturing steps, and requires it to be further strengthened or contained in the final product structure.

Id. at Dkt. # 84-4, at 6. In contrast, the ‘702 Patent creates a fibrous layer of sufficient strength “that it may be taken up on a roll, and/or laminated with another material layer.” Id. at Dkt. # 84-4, at 5. The prosecution history describes the end product as being strong enough that is it capable of

being unsupported. But nothing in the prosecution history, or the patent language itself, suggests that McAirlaids limited its claimed process and device to an embodiment without a conveyor belt or other structure to support the material following embossment by the second pair of calender rolls.<sup>6</sup> See Sorensen v. Int'l Trade Comm'n, 427 F.3d 1375, 1378 (Fed. Cir. 2005) (“During prosecution, a patent application may consistently and clearly use a term in a manner either more or less expansive than it is used in the relevant art, thereby expanding or limiting the scope of the term in the context of the patent claims. However, in order to disavow claim scope, a patent applicant must clearly and unambiguously express surrender of subject matter during prosecution.” (citing Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002)); see also Honeywell Int'l, Inc. v. Universal Avionics Sys. Corp., 493 F.3d 1358, 1365-66 (Fed. Cir. 2007) (“Because the passage is ambiguous, we conclude that it does not constitute a sufficiently clear and deliberate statement to meet the high standard for finding a disclaimer of claim scope.” (citing N. Am. Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1345-46 (Fed. Cir. 2005))).

[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments. See, e.g., Nazomi Communications, Inc. v. ARM Holdings, PLC, 403 F.3d 1364, 1369 (Fed. Cir. 2005) (claims may embrace “different subject matter than is illustrated in the specific embodiments in the specification”); Liebel-Flarsheim, 358 F.3d at 906-08; Teleflex, 299 F.3d at 1327; SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed. Cir. 1985). In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. Gemstar-TV Guide, 383 F.3d at 1366. That is not just because section 112 of

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<sup>6</sup> In arguing McAirlaids limited its claims, Kimberly-Clark relies on Verizon Services Corp. v. Vonage Holdings Corp., 503 F.3d 1295 (Fed. Cir. 2007), and Watts v. XL Sys., Inc., 232 F.3d 877 (Fed. Cir. 2000), both of which are distinguishable. In Verizon, the court found a clear disavowal of the claim scope where, during the prosecution history, the applicants distinguished the prior art by stating the present invention was “restricted to operate within a few feet from a base station (i.e. wireless handsets).” 503 F.3d at 1307. The court held that the language in the prosecution history “clearly disclaimed coverage of systems operating with a range greater than a ‘few feet,’ and that the district court erred in failing to construe the localized system as requiring a range of a few feet.” Id. Likewise, in Watts, both the specification and the prosecution history limited the invention at issue to certain embodiments. 232 F.3d at 883. There is no such limitation here.

the Patent Act requires that the claims themselves set forth the limits of the patent grant, but also because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments.

Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005). As such, Kimberly-Clark's proposed construction is simply not proper.<sup>7</sup>

Nor is McAirlaids' construction appropriate. The term "fiber web" is not exclusive to the material that results from the claimed manufacturing process.

"Fiber web," as the term is used in the '702 Patent, is clear in its meaning, and a person ordinarily skilled in the art would easily understand it. There is no indication that the construction of "fiber web" should be anything other than its plain and ordinary meaning. See Pfizer Inc. v. Teva Pharmaceuticals USA, Inc., 803 F. Supp. 2d 397, 408 (E.D. Va. 2011) ("The court holds that 'an effective amount' requires no construction because a person ordinarily skilled in the art reading the patent would understand its ordinary and customary meaning."); Waddington N. Am., Inc. v. Sabert Corp., No. 09-4883(GEB), 2010 WL 4363137, at \*6 (D.N.J. Oct. 27, 2010) ("[T]his term does not require construction. 'Less than 2000 nanometers' is clear in its meaning. 'Less than' has a well known meaning to even a lay person, and, in the scientific world, 'nanometers' has a well known meaning as a measure of small distances."). Accordingly, this term requires no further construction by the court.

## B. Rollable

The term "rollable" is used in disputed claims 1, 12, and 18 to describe a property of the absorbent fiber web manufactured according to the patented process. McAirlaids argues that no construction of this term is necessary,<sup>8</sup> or, in the alternative, that "rollable" means "capable of being

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<sup>7</sup> Indeed, construing this term using the word "unsupported" makes things less, not more, clear for the jury. Arguably, at the point in which the material passes through the second set of calender rolls, it *is* supported – not by a conveyor belt, but by tension. See Fig. 1, supra.

<sup>8</sup> Again, McAirlaids indicated at the May 29-30, 2014 Markman hearing that its primary position was that "rollable" did

rolled.” McAirlaids’ Opening Claim Construction Br., Dkt. # 85, at 11. This proposed construction is derived from the prosecution history, which reveals that claim 1 of the ‘702 Patent originally stated the fiber web was “capable of rolling,” but was later simplified using the term “rollable.” McAirlaids’ Opening Claim Construction Br., Dkt. # 85, at 11; *id.* at Dkt. # 85-4 at MCPAT00338. Kimberly-Clark contends McAirlaids’ construction is too broad,<sup>9</sup> in that it “fails to limit the method of rolling,” and thus could be interpreted to mean capable of passing through a set of rollers. Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84, at 13. The court agrees that this construction is somewhat problematic and could be confusing to a jury given the number of rollers involved in the ‘702 process.

Kimberly-Clark argues instead that the term “rollable” means “may be taken up on a roll.” *Id.* In support of this construction, Kimberly-Clark cites to the following language from the patent specification: “The material is treated with broad drawing roller 9. Thereafter, it is wrapped onto a take-up roller 11 with the use of a driver roller 10.” ‘702 Patent, col. 5, ll. 60-63. Kimberly-Clark further argues that McAirlaids repeatedly stated during the prosecution history that the invention creates a fiber web that “may be taken up on a roll,” *see, e.g.*, Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84-4, at 5, limiting its claims accordingly, *id.* at Dkt. # 84, at 13. The court declines to read any such limitation into the claim language.

As Kimberly-Clark acknowledges through its proposed construction, nothing in the ‘702 Patent language or its prosecution history requires that the finished product *actually* be taken up on a roll after it is manufactured. Nor must the invention contain a take-up roller on which the embossed material be rolled. The illustrated figures in the ‘702 Patent showing the presence of a

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not require construction and it was offering a proposed construction only as an alternative to the construction proposed by Kimberly-Clark.

<sup>9</sup> Kimberly-Clark also argues in its response brief that McAirlaids “abandon[ed]” the “capable of rolling” language and “the fact that McAirlaids gave up this virtually identical claim language precludes its use as a definition of the term.” Kimberly-Clark Resp. Br., Dkt. # 91, at 18. This argument makes little sense. The patentee replaced “capable of rolling” with “rollable;” it did not entirely eliminate from claim 1 this claimed property of the manufactured material.

take-up roller simply represent the preferred embodiment. See Phillips, 415 F.3d at 1323 (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”). Indeed, when read in full context, the prosecution history cited by Kimberly-Clark makes clear that the manufacturing process does not require that the material be taken up on a roll at the end:

The patterned calender rolls produce a pattern of embossments of non-separating fusion of the cellulose fibers, imparting and [sic] a tear strength of at least 0.12 kN/m; sufficient strength to the unsupported fibrous layer that it may be taken up on a roll, *and/or laminated with another material layer.*

Kimberly-Clark’s Opening Construction Br., Dkt. # 84-4, at 5 (emphasis added). Kimberly-Clark would have the court to ignore the phrase “and/or laminated with another material” in this passage from the prosecution history and construe the disputed term to mean “may be taken up on a roll.” This proposed construction brings to mind a step in the manufacturing process, whereas the term “rollable” is used in the ‘702 Patent to describe an internal property of the absorbent fiber web that is created—specifically, that it is strong and pliable enough to be rolled. Kimberly-Clark’s construction simply will not do.

At base, the parties’ proposed constructions are essentially one and the same.<sup>10</sup> Both suggest the absorbent fiber web created using the claimed manufacturing process can be—but does not have to be—rolled. In that sense, both are correct. However, efforts to define the term “rollable” make the concept more obscure.

“Rollable” means “rollable.” The term, as it is used in the ‘702 Patent, would be clear to someone ordinarily skilled in the art and should be given its plain and ordinary meaning. Accordingly, it requires no further construction by the court.

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<sup>10</sup> Indeed, at the Markman hearing, McAirlaids acknowledged that the parties’ proposed constructions of this term are 98% aligned.

### C. Non-separating fusion of the fibers occurs

The term “non-separating fusion of the fibers occurs” appears in disputed claims 1, 12, and 18 and describes what happens to the fiber material during the embossing process. McAirlaids asks the court to construe this term to mean “the fibers which have been pressed onto one another can no longer be individually separated, piece-by-piece, from one another with a dissecting needle.” McAirlaids’ Opening Claim Construction Br., Dkt. # 85, at 12. Kimberly-Clark contends the term means “the fibers are permanently and irreversibly joined together and the fibers lose their individual fiber structure.” Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84, at 14. Because it is rooted in the patent language, the court will adopt McAirlaids’ proposed construction.

The first part of McAirlaids’ construction, “the fibers which have been pressed onto one another,” comes directly from the claims language itself. Representative claim 1 describes a method for producing an absorbent fiber web suitable for use in the hygiene sector comprising the following embossing step:

- (b) providing a pair of calender rolls having a pattern of point or line-shaped studs, defining a gap therebetween, and inserting the loose non-woven into the gap of the calender rolls that is used to create a pattern of point or line-shaped pressure zones under relatively high pressure, *where the irregularly arranged fibers are pressed onto each other*, wherein
  - (1) the loose non-woven has a moisture content of up to 5 percent by weight when it is inserted,
  - (2) the irregularly arranged *fibers are pressed onto each other* under a pressure in range between 250 and 600 MPa such that non-separating fusion of the fibers occurs and a fiber web with an embossing pattern is created, and
  - (3) the tear strength of the fiber web is at least 0.12 kN/m.

‘702 Patent, col. 9, ll. 57-67; col. 10, ll. 1-5 (emphasis added); see also ‘702 Patent, col. 10, ll. 43-60; col. 11, ll. 6-23; col. 12, ll. 1-16.

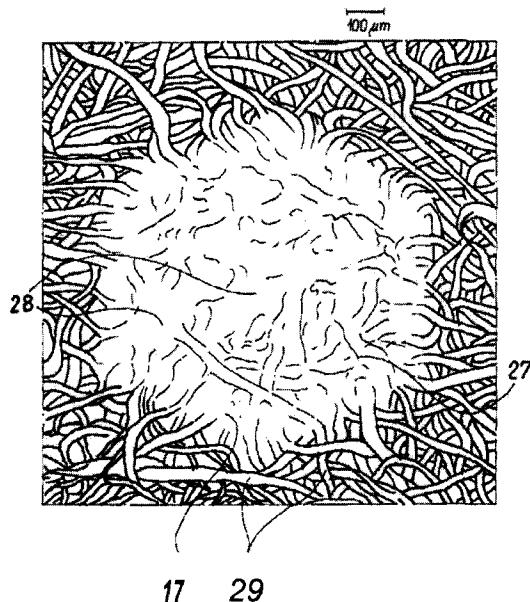
The second part of McAirlaids’ construction, which explains that the fibers “can no longer be separated, piece-by-piece, from one another with a dissecting needle” as a result of this embossing process, tracks language from the specification. The specification provides:

The first processing step is simply a pre-compression or compacting of the non-woven from the irregularly arranged fibers. A fixed web is not produced and it is entirely possible to remove the fibers individually, piece by piece. The tear strength of the non-woven is very low, preferably at least 8 N/m wide.

The non-woven 2 provided by the strainer belt 8 is again moisturized from top and bottom (moisturizing device 5) prior to entering the gap between the two calender rolls 6.1 and 6.2. Between the calender rolls 6.1 and 6.2, the initially loose non-woven is subjected to an array of point-shaped pressure zones, where the irregularly arranged fibers are pressed onto each other under high pressure, such that a close fusion of the fiber bodies occurs and a fiber web 100 with an embossed pattern is created that will not separate after the pressure is released. . . .

‘702 Patent, col. 5, ll. 19-36. Thus, unlike after the first processing step, when “it is entirely possible to remove the fibers individually, piece by piece,” the second step of the process creates pressure zones wherein the “fibers are pressed onto each other” forming “a close fusion of the fiber bodies.”

Id. Figure 4 from the ‘702 Patent illustrates this pressure zone.



The specification explains:

FIG. 4 shows an enlarged presentation of a pressure zone 17 in an electron microscope image. In this case, the pressure zone has a hexagonal shape that has been caused by the insertion of a stud 14

into the non-woven. The pressure applied in this case is 190 MPa (=190 N/mm<sup>2</sup>). It can be seen that the initially round and undamaged fibers 29 are flat and smooth in the pressure zone due to the pressure. The superabsorber particles that were present are optically no longer recognizable, because they have obviously been pressed into the surface. The fiber structure can still be recognized somewhat in the portion of the zones 27 inside the pressure zone 17, while other zones 28 are present where a fiber structure can no longer be recognized. *The fibers pressed onto one another can no longer be separated from one another when trying to do so with a dissecting needle.* Thus, a fusion, compacting and gluing with surface bonding of the fiber and/or cellulose substance has occurred with the pressure being kept under the carbonization limit of the fibers 29.

‘702 Patent, col. 7, ll. 1-19 (emphasis added). McAirlaids’ proposed construction plainly finds support in the patent language.

Kimberly-Clark’s construction, on the other hand, does not. Kimberly-Clark argues its proposed construction is consistent with the specification, which describes a close fusion of the fibers “that will not separate after the pressure is released.” ‘702 Patent, col. 5, l. 36. But the words “permanently” and “irreversibly” appear nowhere in the patent language. Rather, these words come from the prosecution history. Kimberly-Clark asserts McAirlaids argued to the Patent Office that the bond created by the patented method was “permanent” and “irreversible.” See, e.g., Kimberly-Clark Opening Claim Construction Br., Dkt. # 84-6, at 8, 9 (fusion zones create “a permanent bond”), 10 (“[t]he patterned calender rolls produce a pattern of embossments of irreversible, non-separating fusion of the cellulose fibers”), 11 (“the lucid fusion zones produced by the method and device of the present invention are permanently bonded”), 12 (“The web made by the method and device of the present invention achieves irreversible, permanent fiber bonds. . . .”). According to Kimberly-Clark, McAirlaids “limited the bonding of its patent claims to permanent and irreversible bonding” by making these representations. Kimberly-Clark Opening Claim Construction Br., Dkt. # 84, at 16. The court cannot agree.

McAirlaids explained that the patented method creates “irreversible, permanent fiber

bonds,” in order to distinguish it from the Dunning process and highlight its improvement over this prior art:<sup>11</sup>

The fibrous web of Dunning has areas of hydrogen bonding produced by the application of moisture and pressure. These areas of hydrogen bonding areas [sic] do not produce good tear strength, which severely limits the uses of the web. Specifically, the tear strength of the web of Dunning requires it to be supported during subsequent manufacturing steps, and requires it to be further strengthened, or contained, in the final product structure. In addition, the regions of hydrogen bonding area released by moisture. In contrast, the lucid fusion zones produced by the method and device of the present invention are permanently bonded. The fibers in the fusion zones cannot be dissected with a needle. Neither are the lucid fusion zones lost to moisture.

Kimberly-Clark Opening Claim Construction Br., Dkt. # 84-6, at 11. McAirlaids explains what is meant by the words “permanently bonded”— the fibers “cannot be dissected with a needle.” The applicant makes clear: “[T]he fibrous material in the fusion zones has been practically melted . . . providing a web strength beyond that of simple adhesion . . . [I]n the lucid fusion zones of the present invention, the fibers can no longer be separated with a dissecting needle.” Id. at Dkt. # 84-6, at 8-9. In contrast, the hydrogen-bonded fiber materials created by the Dunning process “can be dissected with a needle. And hydrogen bonds are released in water,” whereas the lucid fusion zones created by the instant process “are permanent, and withstand not only high humidity, but the application of water. It can be readily seen that such a web could withstand greater variation in processing and be used in a wider variety of products, especially those requiring tear strength, high loft and absorbency.” Id. at Dkt. # 84-6, at 9.

In the context of comparing and contrasting the Dunning process, the words “permanent”

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<sup>11</sup> In fact, the portion of the prosecution history cited by Kimberly-Clark reveals that during a July 9, 2003 interview, the applicant focused on a number of areas of concern in the application, including “distinguishing the lucid fusion zones of the present invention from hydrogen bonding;” “determining if higher moisture content of the web disturbs formation of lucid fusion zones, or if high humidity would destroy the lucid fusion zones of the present invention;” and “distinguishing the lucid fusion zones of the present application from the hydrogen bonding of Dunning.” Kimberly-Clark Opening Claim Construction Br., Dkt. # 84-6, at 7-8.

and “irreversible” illustrate the strength of the bond created using the method described in the ‘702 Patent—a bond that can withstand the application of water and in which the bonded fibers cannot be dissected with a needle. Outside of this context, however, the words simply go too far. A truly “permanent” and “irreversible” fusion of the fibers is unrealistic and unattainable. Cf. Paragon Solutions LLC v. Timex Corp., 566 F.3d 1075, 1088 (Fed. Cir. 2009) (declining to construe the term “real-time” as being “instantaneous,” because, in practice, some non-zero passage of time is required). The prosecution history cannot be read to suggest the bond created by the patented process is literally “permanent” and “irreversible.”

Nor will these undefined adjectives aid the jury’s understanding of the disputed claim term. Indeed, “permanently bonded,” as those words are used in the prosecution history, has a qualified meaning. It means “the fibers in the fusion zones cannot be dissected with a needle” and are not “lost to moisture.” Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84-6, at 11. Importantly, it is the dissecting needle analogy—not the words “permanent” or “irreversible”—that appears in the patent specification. The dissecting needle provides a concrete way to describe the fusion zones and sheds light on what occurs during the embossment step of the process.

It is quite clear in the context of the ‘702 Patent what is meant by “non-separating fusion of the fibers occurs.” As to this disputed term, the specification provides the best source for claim construction.<sup>12</sup> Because McAirlaids’ proposed construction is in line with the detailed description of the embossing process found in the patent language, the court will adopt it. The court therefore construes this term to mean “the fibers which have been pressed onto one another can no longer be individually separated, piece-by-piece, from one another with a dissecting needle.”

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<sup>12</sup> Because the meaning of this disputed term is clear from the intrinsic evidence, the court need not look to extrinsic evidence. In any event, the expert opinion of Haskell Beckham, Ph.D., on which Kimberly-Clark relies, cites to dictionary definitions of the word “fusion,” none of which contain the words “permanent” or “irreversible.” Haskell Decl., Dkt. # 84-17, at ¶ 13.

**D. Tear strength of the fiber web is at least 0.12 kN/m**

The term “tear strength of the fiber web is at least 0.12 kN/m” appears in independent claims 1, 12, and 18 and describes the strength of the material created as a result of the patented process. “Tear strength” is quantified in kilonewtons per meter (kN/m) throughout the patent language.

Both parties agree that kilonewtons per meter (kN/m) is a measurement of tensile strength. Decl. of Frank C. Murray, Ph.D., Dkt. # 85-7, at ¶ 9; TAPPI T404 cm-92, Dkt. # 84-15, at ¶¶ 3.1, 8.1.1; TAPPI T494 om-01, at ¶¶ 2.1, 8.1.1; Decl. of Phillip Mango, Dkt. # 91-2, at ¶ 11. Tensile strength is the strength of material under tension and is measured in units of force per meter. Decl. of Frank C. Murray, Ph.D., Dkt. # 85-7, at ¶ 13; TAPPI T404 cm-92, Dkt. # 84-15, at ¶ 3.1; TAPPI T494 om-01, at ¶ 2.1; Decl. of Phillip Mango, Dkt. # 91-2, at ¶ 11.

Tear strength, on the other hand, is “[t]he force required to begin or to continue a tear in a fabric under specified conditions.” Dictionary of Fiber & Textile Technology, Dkt. # 84-9, at 155; see also Decl. of Phillip Mango, Dkt. # 91-2, at ¶ 11 (“tear strength” is “the force that it takes to start or continue a tear in a piece or sample of fabric when the fabric is subjected to stress”); ASTM D4850, Dkt. # 84-10, at 9 (defining “tear strength” in fabric as “the capacity of a material to withstand the ultimate tearing force required to propagate a tear after its initiation”). Tear strength is measured in units of force—for example, newtons (N) or kilonewtons (kN)—and does not depend on the width of the fabric. Decl. of Phillip Mango, Dkt. # 91-2, at ¶ 11; see, e.g., ASTM D2261, Dkt. # 84-12, at ¶¶ 11.1, 11.4; see also Decl. of Frank C. Murray, Ph.D., Dkt. # 85-7, at ¶ 10.

McAirlaids asserts that in the context of the ‘702 Patent, “tear strength” means “tensile strength.” McAirlaids’ Opening Claim Construction Br., Dkt. # 85, at 15. Kimberly-Clark offers no alternative construction of this disputed claim term, arguing instead that the term cannot be

construed and is indefinite. Kimberly-Clark insists that tear strength and tensile strength are two separate and distinct concepts and “because the term ‘tear strength’ and the corresponding unit of measurement make no sense together [ ] a person skilled in the art would not understand the Asserted Claims.” Kimberly-Clark Opening Claim Construction Br., Dkt. # 84, at 21. Kimberly-Clark further asserts that “McAirlaids cannot now re-write the claims to fix the indefinite language.” Id. at 19.

The ‘702 Patent consistently quantifies “tear strength” in units of force per meter (kN/m or N/m). See, e.g., ‘702 Patent, col. 2, ll. 33-34; col. 3, ll. 8-9; col. 10, ll. 4-5, 59-60; col. 11, ll. 23, 34; see also id. at col. 1, ll. 49-50 (quantifying “tear strength” of material created by the Dunning process in kilonewtons per meter); col. 5, ll. 22-23 (quantifying “tear strength” of loose non-woven produced after pre-compression step of the patented process in newtons per meter). Every single time the words “tear strength” appear in the patent language with a corresponding measurement, that measurement is quantified in either kilonewtons per meter or newtons per meter, a measurement for tensile strength. There is simply no other plausible construction of the disputed term—either McAirlaids’ proposed construction is correct, or the term cannot be construed and is indefinite.<sup>13</sup>

The Patent Act requires that a patent’s specification “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112 ¶ 12.<sup>14</sup> The United States Supreme Court recently articulated the standard for indefiniteness under § 112. In Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120 (June 2, 2014),<sup>15</sup> the Court held: “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with

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<sup>13</sup> Both parties agree this issue is ripe for adjudication and that further evidence would not aid the court’s analysis.

<sup>14</sup> This statute was amended by the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, which went into effect on September 16, 2011. Paragraph 2 of § 112 was replaced with § 112(b), which contains substantially similar language. Because the ‘702 Patent issued in 2004, the prior version of the statute applies.

<sup>15</sup> The Supreme Court issued its opinion in Nautilus after the Markman hearing in the instant case.

reasonable certainty, those skilled in the art about the scope of the invention.” *Id.* at 2124. The Court explained that § 112 “entails a ‘delicate balance.’” *Id.* at 2128 (quoting Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 731 (2002)). “On the one hand, the definiteness requirement must take into account the inherent limitations of language” and must allow for “[s]ome modicum of uncertainty” to incentivize innovation. *Id.* “At the same time, a patent must be precise enough to afford clear notice of what is claimed, thereby ‘appris[ing] the public of what is still open to them.’” *Id.* at 2129 (quoting Markman, 517 U.S. at 373 (internal citations omitted)). In light of these competing concerns, the statute requires “that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Id.*; accord Interval Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1369-70 (Fed. Cir. 2014) (quoting Nautilus, 134 S. Ct. at 2124).

Kimberly-Clark grounds its indefiniteness argument in the fact that “tear strength” and “tensile strength” have distinct meanings in the textile industry. It cites definitions from a technical dictionary and references to these terms in technical standards publications. In so doing, however, Kimberly-Clark ignores the way in which the disputed term is used in the context of the ‘702 Patent. Courts have recognized that technical dictionaries and treatises “may not be indicative of how terms are used in the patent.” Invensys Sys., Inc. v. Emerson Elec. Co., No. 6:12-cv-799, 2014 WL 3976371, at \*2 (E.D. Tex. Aug. 6, 2014) (citing Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005)). “There is no guarantee that a term is used in the same way in a [technical dictionary or treatise] as it would be by the patentee.” Phillips, 415 F.3d at 1322. Reliance on dictionaries and their definitions, therefore, “focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.” Phillips, 415 F.3d at 1321; see also Interval Licensing LLC, 766 F.3d at 1377 (“[W]e have cautioned against relying on dictionary definitions at the expense of a fair reading of the claims, which must be understood in light of the

specification.”); Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1347 (Fed. Cir. 2009) (“[C]ourts may ‘rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.’” (citing Phillips, 415 F.3d at 1322-23)); Hoechst Celanese Corp. v. BP Chem. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996) (“A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning.” (citations omitted)); Hologic, Inc. v. Senorx, Inc., No. C-08-00133RMW, 2009 WL 416596, at \*3 (N.D. Cal. Feb. 18, 2009) (“The court, of course, should not necessarily interpret a claim by giving to it the ‘ordinary and customary meaning’ that someone skilled in the art would give it in the abstract.”). As Phillips instructs, “the context in which a term is used in the asserted claim can be highly instructive.” 415 F.3d at 1314. In this case, it is.

It is abundantly clear that in the context of the ‘702 Patent, “tear strength” means “tensile strength.” The ‘702 Patent claims a method and device for producing an absorbent fiber web that is suitable for use in the hygiene sector.

The material itself has a high tear strength, and, in addition, a high absorption capacity, which is increased even further through the use of superabsorbers such that it can be used as packaging material, for hygiene products, lining material, pillow filler and similar products. The material can also be used in the construction industry as a [sic] well as replacement for paper and cardboard. The aforementioned products can also be used for napkins, tampons, baby diaper panties, slip inserts, sanitary napkins, and incontinence products.

‘702 Patent, col. 6, ll. 58-67. Given its intended use, the ability of the fiber material to absorb and hold liquid without sagging and breaking is paramount. See, e.g., ‘702 Patent, col. 2, ll. 56-58 (“The tear strength is dimensioned such that the non-woven can sag over a length of 0.1 to 1 m without tearing.”); col. 4, ll. 20-22 (“The fiber web has sufficient tear strength and also a high absorption capacity such that it is ideally suited for hygiene products.”). The relevant consideration, therefore,

is tensile strength.

In fact, the ‘702 Patent consistently quantifies the strength of the material in terms of tensile strength, using units of force per meter.<sup>16</sup> The patent’s repeated use of the “kN/m” unit of measurement to describe “tear strength” lends support to McAirlaids’ proposed construction. See Cephalon, Inc. v. Celgene Corp., 985 F. Supp. 2d 171, 182 (D. Mass. 2013) (“This construction is reinforced by the ‘m<sup>2</sup>/mL’ unit of measurement used to describe the surface area of the nanoparticles and microparticles in the claims. If the taxane particles were intended to be measured in powder form, the unit of measurement would be ‘m<sup>2</sup>/g’—the units used in the specification to describe the results of surface area analysis of the dry porous matrix.”); see also Paragon Solutions, LLC v. Timex Corp., 566 F.3d 1075, 1088 (Fed. Cir. 2009) (holding “real-time” could not mean instantaneous, in part, because “two of the claimed types of real-time data—velocity and pace—are calculations of the rate of movement. Because a rate of movement is simply distance moved *over time* (or time over distance moved), calculation of a rate of movement necessarily requires the passage of a non-zero amount of time.”).

Strength is an earmark of the fiber web manufactured according to the ‘702 process. The patent extols the considerable “tear strength” and “tear resistance” of the fiber material. Indeed, the “fiber web [is] so strong that a tear strength of at least 0.12 kN/m, preferably of up to 0.65 kN/m, is achieved.” ‘702 Patent, col. 3, l. 8. This constitutes a significant improvement over the prior art. As described in the ‘702 Patent, the Dunning process employs a similar technique but yields a material with a “tear strength” of about 0.09 kN/m—a material that “tears easily as is the case with facial tissues.” ‘702 Patent, col. 1, ll. 50-51.

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<sup>16</sup> Certain references in the patent language confirm that what matters is strength over distance. See, e.g., ‘702 Patent, col. 2, ll. 56-58 (“The tear strength is dimensioned such that the non-woven can sag over a length of 0.1 to 1 m without tearing.”); col. 5, ll. 14-18 (“[T]he tear strength is sufficient that the non-woven 2 does not tear when bridging the distance between the end of the strainer belt 8 and the reversing roll 7 to the inlet into the gap between the two additional calender rolls 6.1 and 6.2, which is about 50 cm.”).

Given the emphasis throughout the ‘702 Patent on the strength of the absorbent fiber web, one ordinarily skilled in the art would recognize that the 0.12 measurement that appears repeatedly in the claims language and specification corresponds to tensile strength. It is far too small a number to be anything other than force divided by distance as used in this context. Cf. Howmedica Osteonics Corp. v. Tranquil Prospects, Ltd., 401 F.3d 1367, 1372 (Fed. Cir. 2005) (“One of ordinary skill in this art would recognize that a one-dimensional linear measurement of the ‘transverse sectional dimensions’ would defeat the purpose of the invention to provide a snug fit of the prosthesis in the medullary canal. A two-dimensional measurement, on the other hand, provides the snug fit that is the centerpiece of this invention.”).

Moreover, a chart labeled “Appendix II” in the prosecution history leaves little doubt that in the context of the ‘702 Patent, “tear strength” means “tensile strength.” This chart compares the “tensile strength” of the ‘702 Patent with that of the Dunning patent, using measurements of kilonewtons per meter.<sup>17</sup> See McAirlaids’ Resp. Br., Dkt. # 92-2, at MCPAT00337; Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84-5, at Appendix II. It is identified in the prosecution history as a chart prepared for the European Patent Examiner, provided to serve as a comparison of the ‘702 Patent with Dunning and other patents. See Kimberly-Clark’s Opening Claim Construction Br., Dkt. # 84-5, at 6. The chart lists the “tensile strength” of the ‘702 Patent as ranging from 0.12 kN/m – 0.65 kN/m, and the “tensile strength” of the Dunning patent as 0.087 kN/m (or 0.09 kN/m, rounded to the nearest hundredth). Importantly, a passage from the prosecution history refers to the measurements on this chart as being measurements of “tear strength:” “As is set forth in the chart, Dunning does not produce a fiber layer with good tear strength, limiting its usefulness. In contrast, the fiber layer of the present invention has areas of fused cellulose fibers, which impart a tear strength of at least 0.12 kN/m.” Id. at Dkt. # 84-5, at 6-

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<sup>17</sup> The chart also compares the pressure, weight per area, and humidity of the patents.

7. Clearly, the words “tensile strength” and “tear strength” are used synonymously in the prosecution history to describe the strength of the fiber webs manufactured according to the ‘702 and Dunning processes.<sup>18</sup>

Kimberly-Clark nevertheless insists the ‘702 Patent says “tear strength” and quantifies it using a unit of measurement that makes no sense, and it argues the court cannot now rewrite the claims language to correct the error. To be sure, “courts may not redraft claims, whether to make them operable or to sustain their validity.” Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004); accord Allen Eng’g Corp. v. Bartell Indus., Inc., 299 F.3d 1336, 1349 (Fed. Cir. 2002). “Even ‘a nonsensical result does not require the court to draft the claims . . . .’” Chef Am., 358 F.3d at 1374.

But references to “tear strength” in the ‘702 Patent are not errors in need of correcting. The patentee’s use of the term “tear strength” throughout the patent language, with the corresponding measurement of “0.12 kN/m,” is deliberate. McAirlaids simply asks the court to give the term its intended meaning. See Ultimax Cement Mfg. Corp., 587 F.3d at 1348 (holding that interpreting claim term “soluble calcium sulfate anhydride” to mean “soluble anhydrous calcium sulfate” “is not rewriting the claim or correcting a typographical error,” but merely restating its plain meaning).

The Chef America case, on which Kimberly-Clark relies, is distinguishable. In that case, the disputed claim term required “heating the resulting batter-coated dough to a temperature in the range of about 400°F. to 850°F.” 358 F.3d at 1373. The issue presented was whether the dough itself was to be heated to that temperature (which would burn it to a crisp) or whether the oven was to be heated to the stated temperature. The court held that “the claim means what it says.” Id. at

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<sup>18</sup> Other portions of the prosecution history also use these words interchangeably in discussing the strength of the material. Compare McAirlaids’ Resp. Br., Dkt. # 92-2, at MCPAT00364 (referencing concern that the Dunning process “achieves a machine direction tensile within the range of tensile strengths achieved by the fabric made with the novel process and device of the present invention”) with id. at Dkt. # 92-2, at MCPAT00367 (the Dunning process creates areas of hydrogen bonding that “do not produce good tear strength, which severely limits the uses of the web.”).

These are ordinary, simple English words whose meaning is clear and unquestionable. There is no indication that their use in this particular conjunction changes their meaning. They mean exactly what they say. The dough is to be heated to the specified temperature. Nothing even remotely suggests that what is to be heated is not the dough but the air inside the oven in which the heating takes place. Indeed, the claim does not even refer to an oven.

Id. at 1373. The court found the claims were susceptible to only one reasonable interpretation. Id. at 1374. Thus, in accordance with settled practice, the court “construe[d] the claim as written, not as the patentees wish they had written it.” Id.

Unlike in Chef America, the words at issue here are not “ordinary, simple English words” with clear meaning. Id. at 1373. They are technical terms. Kimberly-Clark urges the court to look at the meaning of these words in the abstract and find that “tear strength” measured in kilonewtons per meter makes no sense. But the court cannot ignore how the words are used in the context of the patent language. Phillips, 415 F.3d at 1321, 1322; Hoechst Celanese Corp., 78 F.3d at 1578; Hologic, 2009 WL 416596, at \*3; see also AIA Eng’g Ltd. v. Magotteaux Int’l S/A, 657 F.3d 1264, 1276 (Fed. Cir. 2011) (“[R]igidly confining ‘solid solution’ to its ordinary meaning gives rise to a contradiction in terms . . . . We strive, where possible, to avoid nonsensical results in construing claim language.”). In Chef America, the court found no other reasonable interpretation of the disputed claim term outside of the ordinary meaning of the words. Here, on the other hand, there is a reasonable interpretation of the disputed term as it is used in the context of the ‘702 Patent, and that interpretation is the one McAirlaids advances.

In Allen Engineering, the court declined to rewrite the claims language to replace the word “perpendicular” with the word “parallel.” In that case, however, the claims language at issue limited “one of the two pivot steering boxes to pivoting ‘its gear box *only* in a plane *perpendicular to* said biaxial plane,’” while the specification described the structure in contrary terms, stating that

“‘gearbox 85A *cannot* pivot in a plane *perpendicular to* the biaxial plane.’” 299 F.d at 1349. The ‘702 Patent contains no such contradictory use of the disputed claim term.

Kimberly-Clark also argues the words “tensile strength” appear nowhere in the claim or specification language, and thus there is no clear expression of the patentee’s intent to redefine the term “tear strength.” Kimberly-Clark’s Resp. Br., Dkt. # 91, at 6, 6 n.4. The fact that the words “tensile strength” do not appear in the patent language, however, makes McAirlaids’ proposed construction even more plausible. If the ‘702 Patent included references to both “tear strength” and “tensile strength,” one might infer that a different meaning should be assigned to each term. See Bancorp Servs., LLC v. Hartford Life Ins. Co., 359 F.3d 1367, 1373 (Fed. Cir. 2004).<sup>19</sup>

Moreover, the failure to expressly define “tear strength” “is, of course, not fatal, for if the meaning of the term is fairly inferable from the patent, an express definition is not necessary (although of course the inclusion of a definition would have avoided the need for this time-consuming and difficult inquiry into indefiniteness).” Id.; see also AIA Eng’g Ltd. v. Magotteaux Int’l S/A, 657 F.3d 1264, 1276 (Fed. Cir. 2011) (holding “[t]he specification need not reveal such a definition explicitly,’ but may do so ‘by implication.’” (quoting Astrazeneca LP v. Apotex, Inc., 633 F.3d 1042, 1051-52 (Fed. Cir. 2010) (internal citations omitted))).

The consistent references in the patent language to “tear strength” measured in kilonewtons per meter, coupled with the synonymous use of “tear strength” and “tensile strength” in the prosecution history, lead the court to conclude that “tear strength” means “tensile strength” in the context of the ‘702 Patent.<sup>20</sup> See Hologic, Inc. v. Senorx, Inc., No. C-088-00133 RMW, 2009 WL 416596, at \*4 (N.D. Cal. Feb. 18, 2009) (“[A]lthough ‘apparatus volume’ was an odd choice of

<sup>19</sup> As Bancorp instructs, “[t]hat inference, however, is not conclusive; it is not unknown for different words to be used to express similar concepts, even though it may be poor drafting practice.” 359 F.3d at 1373.

<sup>20</sup> In support of their arguments, the parties offer declarations from competing experts, one who claims the meaning of this disputed term would be easily understood by a person ordinary skilled in this art, the other opining to the contrary. Because the intrinsic evidence leaves no doubt as to the meaning of “tear strength of the fiber web is at least 0.12 kN/m,” the court need not consider this extrinsic evidence.

language to describe what the inventor intended to describe, its use was consistent in the claim, in accordance with use in the prosecution history, and it results in coverage of the embodiments disclosed.”). Thus, the court construes the disputed term to mean “tensile strength of the fiber web is at least 0.12 kN/m.” “[I]n clarifying the meaning of claim terms, courts are free to use words that do not appear in the claim so long as “the resulting claim” interpretation . . . accord[s] with the words chosen by the patentee to stake out the boundary of the claimed property.” Volumetrics Med. Imaging, LLC v. Toshiba Am. Med. Sys., Inc., No. 1:05CV00955, 2011 WL 6934603, at \*1 (M.D.N.C. Dec. 30, 2011) (quoting Pause Tech. LLC v. TiVo, Inc., 419 F.3d 1326, 1333 (Fed. Cir. 2005) (citations omitted)). Here, a skilled artisan could readily ascertain the bounds of the claims from the patent language.

Indeed, the intrinsic record shows no intent for “tear strength” to mean anything other than “tensile strength.” Id. at \*11. The disputed term is therefore not open to multiple interpretations. Cf. Interval Licensing LLC, 766 F.3d at 1371 (citing Nautilus, 134 S. Ct. at 2130 & n.8, as indicating “there is an indefiniteness problem if the claim language ‘might mean several different things and “no informed and confident choice is available among the contending definitions”’). There is only one reasonable construction, and that construction would be easily understood by someone ordinarily skilled in the art reading the patent in its entirety.

#### IV.

For the foregoing reasons, the court construes the disputed terms of the ‘702 Patent as follows:

1. “Fiber web” requires no construction and will be given its plain and ordinary meaning;
2. “Rollable” requires no construction and will be given its plain and ordinary meaning;
3. “Non-separating fusion of the fibers occurs” means “the fibers which have been pressed onto one another can no longer be individually separated, piece-by-piece, from one

another with a dissecting needle;"

4. "A pair of calender rolls having a pattern of point or line-shaped studs" means "two calender rolls where each roll has a pattern of point or line-shaped studs;" and
5. "Tear strength of the fiber web is at least 0.12 kN/m" means "tensile strength of the fiber web is at least 0.12 kN/m.

An appropriate Order will be entered.

Entered: 02-04-15

*ts/ Michael F. Urbanski*

Michael F. Urbanski  
United States District Judge